

Wave - periodic motion
that carries energy.

(Waves do NOT carry material,
waves at OAS do not bring
water that comes from Portugal.
or Morocco. When I talk,
the energy from my vocal
cords vibrates your ear drums
not the air from my throat.)

Wave pulse - just a half of
one wavelength.

Medium - substance that
oscillates when the wave
passes.

ex. Sound - medium is air

Light - medium is electromagnetic
fields

Ocean - medium is water

Earthquake - medium is the
ground

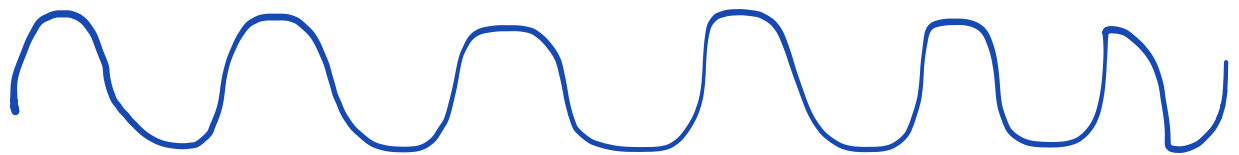
We classify waves by their medium:

Mechanical Waves - physical medium

Electromagnetic Wave - medium is electromagnetic fields

We also classify waves based on the movement of the medium.

Transverse - medium moves $\perp$ to the wave's motion.



Longitudinal Wave - medium moves $\parallel$ to the wave's motion

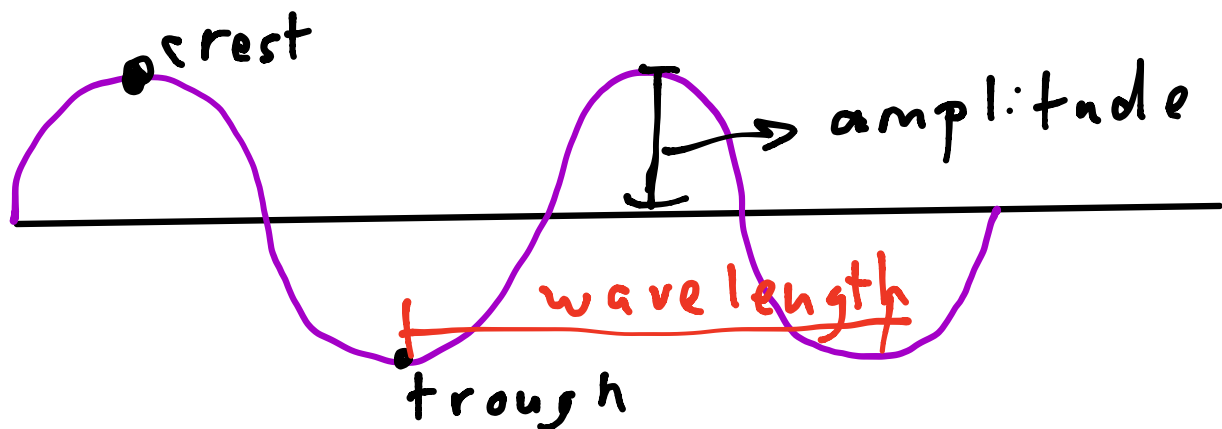


Elliptical or Surface

- medium moves in an ellipse
- simultaneous trans. + long. waves.
- ocean wave



Parts of a wave:



Crest - highest point

trough - lowest point

amplitude - the height of a wave

- the energy

wavelength - the distance between crests

- symbol = λ

period - time for one cycle

frequency - cycles/second

Wave speed - speed of the wave

- symbol = v - units = m/s - scalar

$$v = f \lambda$$